Idaho 8th Grade Direct Mathematics Assessment

2003 8th GRADE
MAIN RANGEFINDER
2

It is important that you show or explain how you solved the problems on this assessment. If you use a calculator, show how you set up the math.

1. Your school is planning a snowboarding trip to a local resort as part of the advanced P.E. class. Each student must purchase a regular or P.E. class package.

Regular Package		P.E. Class Package		Lunch	
Lift pass	$22.00	Lift pass	$ 6.00	Monster burger	$5.95
Group Lesson	$18.00	Group lesson	$ 7.00	Fries	$2.35
Snowboard	$25.00	Snowboard	$13.00	Drink	$1.70

Frequent computational or surface errors

a. How much would you save by choosing the P.E. class package? *Show or explain how you found your answer.*

40 (22)10 18 25 = 55 — 6 7)10 13)10 = 26 — you would save $9.00 by choosing the P.E. package

b. If you were to go snowboarding using the regular package, the snowboard rental would represent what percent of the total cost? *Show or explain how you found your answer.*

snow board $25 / whole package $55 = 55)25 = 45 = 45%

c. At lunchtime you decide to have a monster burger, fries, and a drink. Find the total cost of lunch including a 6% sales tax. *Show or explain how you found your answer.*

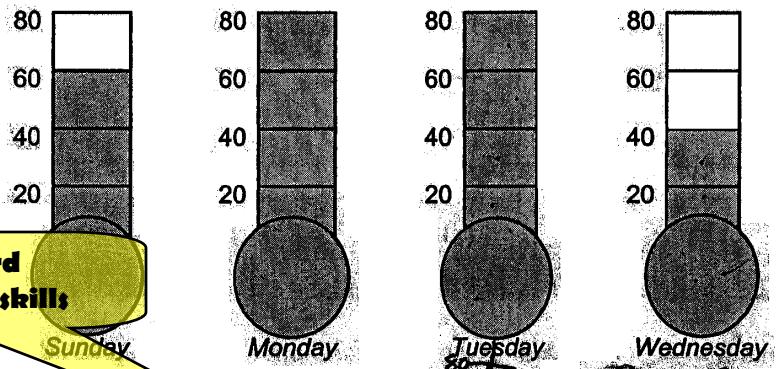
burger: $5.30
fries: $2.49
Drink: $1.80

1 full lunch would cost you $11.59

Frequent computational or surface errors

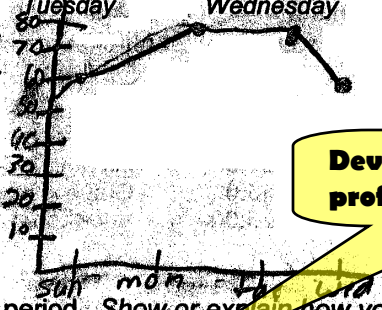
Read problems 2, 3, 4, and 5 on this and the next two pages. Select three problems to answer. Answer ALL of the parts of the three problems you select to answer. Cross out the one problem that you do not choose to answer.

2. During the first four days of last week, Dan recorded the 10:00 a.m. temperature. Use the data below to answer the following prompts.



Development toward proficiency of basic skills

a. Make a graph to represent the temperature.

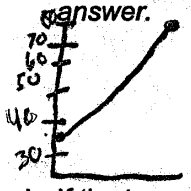


Development toward proficiency of basic skills

b. Find the mean temperature for the four-day period. *Show or explain how you found your answer.*

60
+ 80
+ 80
60 280 the mean over the 4 day period would be 280°.

c. On Tuesday at 7:30 a.m., the temperature was 35°. Determine the rate of change, in degrees per hour, between 7:30 a.m. and 10:00 a.m. *Show or explain how you found your answer.*



9° for every 0:30 min
18° for every 1 hour

d. If the temperature changed at a constant rate on Tuesday, determine the temperature at 8:45 a.m. *Show or explain how you found your answer.*

$10\overline{)30}$ 3

35
+18
53 + 3 = 56° at 8:45

Demonstrates basic use of thinking skills

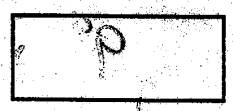
3. The rectangle shown here is 1 unit by 2 units.

a. Find the perimeter and the area of this rectangle. *Show or explain how you found your answer.*

b. Sketch and label a rectangle that is 4 units by 8 units. Find the perimeter and the area of this second rectangle. *Show or explain how you found your answer.*

c. What is the ratio of the perimeters of the first rectangle to the second rectangle? What is the ratio of the areas of the first rectangle to the second rectangle? *Show or explain how you found your answer.*

d. Describe the perimeter and area of a rectangle that is three times as long and three times as wide as the rectangle shown here. *Show or explain how you found your answer.*



4. Each time you buy a hamburger or hot dog at BOB'S DRIVE-IN, you get a card with three squares on it. When you rub each square on your card, a picture of a taco or a drink appears. If all pictures match, you get a free order of fries.

a. List all the possible ordered combinations of pictures you could get when you rub off the squares. *Show or explain how you found your answer.*

Limited use of communication skills

About 9 different combinations.

b. What is the probability that the card you get will be a winner? *Show or explain how you found your answer.*

About a 33% chance

Limited use of communication skills

c. Today, BOB'S DRIVE-IN gave away 296 cards. Suppose that one fourth of the cards were winning cards. How many orders of fries were given away? *Show or explain your answer.*

74
4|296
-28
16

About 74 orders of fries were given away.

d. It costs BOB'S DRIVE-IN $0.23 to buy, prepare, and serve an order of fries. How much did the give-away cost BOB'S? *Show or explain how you found your answer.*

0.23
x 74
17.02

$17.02

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5. The school drill team has decided to have a car wash for a fund-raiser. They have discovered that 3 girls can wash 2 cars in about 15 minutes. The team has 24 girls.

a. How many cars can the entire team (24 girls) wash in 5 hours? *Show or explain how you found your answer.*

8
3|24

144 cars

b. If one group of girls washes 40 cars, what fraction of the total do they wash? What percent of the total do they wash? *Show or explain how you found your answer.*

9 1/9

c. The drill team charges $5.00 per car. Find the amount of money that will be left after the team spends 40% of their earnings for summer camp. *Show or explain how you found your answer.*

40|720

The team will have about $320 left